REMARKS

Upon entry of this response, claims 19, 49-51, 64-65, and 67-72 are pending, and of these claims 19, 49, and 72 are independent.

Applicants have amended the preamble of claims 19, 49, and 72 to replace "probe set is capable of the identification of a biological molecule" with "biological probe arrays comprise a plurality of the probe-sets that each include one or more probes having complementary sequence to a sequence of a target molecule expressed from a gene or EST" (the support for which may be found in paragraphs [0032] and [0056]), which Applicants feel more accurately represents the relationship between the biological probe arrays and the probe-sets disposed thereon.

In addition, Applicants have amended claims 19, 49, and 72 to include the limitations of receiving and providing information over a network using a web browser operated on a user-side client, the support for which may be found in paragraphs [0054] and [0070]; the user typing the selection of one or more names that each specifically identify a probe set where each name is arbitrarily assigned to the probe set by a probe array manufacturer, the support for which may be found in paragraph [0056]; identifying the gene or EST that corresponds with each selected arbitrary name using data that defines an association between the arbitrary name, probe-set, and the corresponding gene or EST, the support for which may be found in paragraph [0074]; and correlating each gene or EST with a set of protein family data using a protein sequences that corresponds to the gene or EST to identify the protein family, the support for which may be found in

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paragraph [0089]. Applicants have also removed the limitations of probe-set

identifiers which applicants assert are unnecessary in light of the aforementioned

amendments.

Applicants respectfully assert that the amended claim limitations provide

greater clarity to the scope of the claims pending in the application. In particular,

Applicants believe that the present amendments clarify the scope of the claims

with respect to a name arbitrarily assigned by a probe array manufacturer to

specifically identify a probe set. Applicants also believe that the amendments

clarify the relationship of the arbitrary names to their correlated protein family

data by including the step of identifying the corresponding gene or EST using

data that defines the associations between the arbitrary name, probe set, and gene

or EST.

Applicants have also amended the preamble to add clarity to the

relationship of the biological probe array with the plurality of probe sets disposed

thereon, such as for instance, clarifying that the term "probe set" refers to one of a

plurality of sets of one or more probes that interrogate a target molecule expressed

from a gene or EST.

Applicants assert that no new matter is presented by these amendments

and respectfully request entry of the same.

Reply to Claim Rejections – 35 U.S.C. §112

Claims 19, 49-51, 64-65, and 67-72 are rejected under 35 U.S.C. §112.

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Applicants respectfully disagree with the Examiner and assert that the

limitations of "one or more biological probe arrays" are supported by the

description. For example, paragraph [0056] describes the following:

> "the term *'probe set' refers* in some implementations to
> *one or more probes from an array of probes on a microarray.* For
> example, in an *Affymetrix® GeneChip® probe array*, in which
> probes are synthesized on a substrate, a probe set may consist of 30
> or 40 probes"

It is clear that the aforementioned example that the application provides

support for a biological probe array (i.e. one probe array), and further broadly

describes a particular brand of probe arrays (i.e. all probe arrays provided under

the GeneChip® brand).

Further, Applicants respectfully point the Examiner to paragraph [0073]

that describes probe sets associated with a plurality of biological probe arrays, and

further elaborates on a plurality of probe arrays associated with the

aforementioned brand (i.e. the GeneChip® brand). For example, paragraph

[00073] describes:

> "The data update in database 518 includes data related to
> genes or EST's that correspond with one or more probe sets. *The
> probe sets may be those used or designed for use on any
> microarray product,* and/or that are expected or calculated to be
> used in *microarray products of any manufacturer or researcher.*
> For example, *the probe sets may include all probe sets synthesized
> on the line of stocked GeneChip® probe arrays from Affymetrix,
> Inc., including its Arabidopsis Genome Array, CYP450 Array,
> Drosophila Genome Array, E. coli Genome Array, ... , Human
> Genome U95 Set, Human Genome U133 Set "*

Applicants respectfully assert that it would be clear to one of ordinary skill

upon reading the description that one or more probe sets may be associated with

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one or more biological probe arrays. For example, the passages above illustrate a

plurality of probe arrays associated with the GeneChip® probe array brand. Thus,

Applicants add that the same persons of skill in the art would understand that the

provided information on probe sets resulting from the claims would also include

information of probe sets on one or more biological probe arrays.

However, in the interest of advancing prosecution Applicants have

amended claims 19, 49, and 72 to remove the "one or more" limitation in

reference to the biological probe arrays, which are clearly supported in the

description provided above.

Applicants respectfully assert that they have shown support in the

description and thus assert that rejection to the limitations is improper. However,

Applicants have amended the claims to remove the language the Examiner finds

disagreeable in the interest of furthering prosecution. Therefore, Applicants

respectfully request that the rejections be withdrawn.

Reply to Claim Rejections – 35 U.S.C. §102(e)

Claims 19, 49-51, 64-65, 68, and 72 are rejected under 35 U.S.C. §102(e)

over Maslyn et al. (US Patent Serial No. 6,408,308)

Applicants respectfully assert that the presently claimed invention

represents a different way to acquire information than what is described by

Maslyn et al. For example, Maslyn et al. requires that a user makes selections

from graphical representations of probe elements in displayed image data

acquired from scanned probe arrays. Such image data are typically large files that

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must be loaded into memory and processed by an application in order to provide
the representations to the user. The presently claimed invention is not restricted
to the computationally inefficient process of loading and presenting images from
which a user makes a selection. Further the claimed invention is not limited to
selecting probe elements represented in the image as is required by Maslyn et al.
In other words, in Maslyn et al. if the probe element is not represented in the
image, it is not available to the user to select. Instead, in the presently claimed
invention the user may type one or more names into a web browser that
specifically identifies probe sets disposed on any probe array that the user may
have employed at any time to generate results. The claimed selection is made
without having to choose from a group of probe sets presented in a display.

Further, Applicants respectfully disagree with the Examiners interpretation
of Maslyn et al. with respect to the description of a name assigned by a probe
array manufacturer that specify the identity of a probe set. For example, Table 1
col. 15, line 41 *et seq.* of Maslyn et al. specifically provides definitions for many
of the identifiers described in the application. Applicants would like to point out
that Table 1 does not include a name that specifies the identity of a probe set.
Instead Table 1 indicates that the probe set is identified by its physical location on
the array (see SummaryElementID: a unique identifier for each element's location
on a microarray; SummaryRow: designates the physical row for the element on
the microarray; and SummaryColumn: designates the physical column for the
element on the microarray). But again, in the interest of furthering prosecution,

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Applicants have amended each of the independent claims to further clarify the

scope as described in greater detail below.

As described above, Applicants have amended claims 19, 49, and 72 to

further clarify the limitations of receiving a user selection of one or more names

each arbitrarily assigned by a probe array manufacturer to specifically identify a

probe set. Applicants respectfully assert that Maslyn et al. does not describe the

clarified limitations as amended. For example, Applicants have amended the

claim to include a name arbitrarily assigned by a probe array manufacturer that

specifically identifies a probe set. The Merriam-Webster Online Dictionary lists a

definition for the term "arbitrary" as:

> based on or determined by individual preference or convenience rather
> than by necessity or the intrinsic nature of something <an arbitrary standard>
> <take any arbitrary positive number> <arbitrary division of historical studies into
> watertight compartments -- A. J. Toynbee>

In other words, the probe array manufacturer assigns a name that

specifically identifies the probe set based upon the manufacturers' preference or

convenience as opposed to assigning a name based upon an intrinsic or factual

feature associated with the probe set. For example, a naming convention may be

employed to assign names that specify elements the manufacturer wants to

identify, where the name assigned by the naming convention may include a

preferred structure that has no association with any intrinsic feature of the

element. For instance, the preferred structure may offer convenience for the

storage and retrieval of information based upon a particular data model or other

parameters unrelated to the named probe set.

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Applicants acknowledge that prior to the present amendments the Examiner indicated that Maslyn et al. describes a manufacturer provided identification of "sites on the microarray having probes corresponding to a particular transcript", and further describes the manufacturer providing "data on the specific transcripts" (column 4, lines 49-52). Applicants respectfully assert that neither of the indicated features describes arbitrary names assigned by the manufacturer. Rather both descriptions identified by the Examiner refer to physical location or identification of intrinsic features of the probes.

For example, the "sites on the microarray having probes corresponding to a particular transcript" do not refer to an arbitrarily assigned name. Instead the language is a reference to the physical locations (i.e. sites) on the microarray where the probes are positioned, and the correspondence of each probe position to a particular transcript. Neither the physical locations nor the correspondence of the probe locations with transcripts are arbitrary names, rather both are clearly intrinsic features of the probe array. Similarly, the "data on specific transcripts" language refers directly to intrinsic features (i.e. "data on") of the transcripts. There is also no description in Maslyn et al. that the "data on transcripts" as indicated by the Examiner has a direct relationship with any probe such as for identification. Therefore, the indicated reference clearly does not describe an arbitrary name that specifies the identity of a probe set.

Applicants further acknowledge that the Examiner has indicated that Maslyn et al. describes an Image identifier (Image ID) and a Sequence identifier (Sequence ID) (col. 9, lines 49-55; col. 11, lines 15-16; and Table 1 col. 15, line

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41 *et seq.*), as well as displaying names of datasets resulting from a user defined

query (col. 11, lines 29-41). Applicants respectfully assert that none of the

aforementioned identifiers are described by Maslyn et al. as identifiers of probe

sets in the way probe sets are defined by the clarified limitations.

For example, the ImageID is described in Maslyn et al. as "identifies a

particular stored image or scan for that hybridization" (col. 9, lines 49-55; Table

1, col. 15, line 41 *et seq.*), where the hybridization is described as "hybridization

includes a sample and microarray to which the sample was applied". Thus it

should be clear that the ImageID as described by Maslyn et al. describes an

identifier for the image data from a scanned probe array that has been exposed to

a sample. Applicants respectfully assert that there is no description of the

ImageID specifically identifying a probe-set that is one of a plurality of probe sets

on a biological probe array.

Similarly, the SequenceID is described in Maslyn et al. as a specified

"characteristic" of the array element data and not as an identifier of a probe or

element. In other words, the SequenceID described by Maslyn et al. is a

characteristic identified by the probe element, but not as an identifier of the probe

element. Applicants further assert that the SeqeunceID is not described as

assigned by the manufacturer. For example, Applicants respectfully assert that

sequence identifiers typically employed are assigned by data curators for

sequence information, such as the well known NCBI GenBank accession number

for sequences.

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Further, the "names of datasets" indicated by the Examiner does not
identify a specific probe or probe set. For example, the term "dataset" is
described by Maslyn et al. in col. 9, lines 19-21 as "A dataset refers to a set or
collection of related data. For example, in the expression database, the raw
expression data from a microarray is stored as a dataset." Therefore, it is clear
that the "names of datasets" do not specifically identify individual probe sets in
the way probe sets are defined by the clarified limitations.

Applicants would also like to add that each of the independent claims have
been amended to clarify how the user selects the names (i.e. by typing) that
distinguishes the claims from the described selection of Maslyn et al. (i.e. by right
clicking a mouse of graphical representations of probe elements in scanned image
data). Further, Applicants add that since Maslyn et al. does not describe any type
of arbitrarily assigned name that specifically identifies a probe set it cannot also
describe data that defines an association of said arbitrary manes with their
specifically identified probe sets or the corresponding genes or EST's.

Therefore, Applicants respectfully assert that Maslyn et al. does not teach
the combination of elements of independent claims 19, 49, and 72 as amended,
and are thus each patentable for the reasons given above. Also, each of claims
50-51, 64-65, and 68, each depends from claim 19 or 49 and thus patentable for
the same reasons.

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Reply to Claim Rejections – 35 U.S.C. §103

Claims 67, and 69-71 are rejected under 35 U.S.C. §103(a) over Maslyn et

al. et al. (US Patent Serial No. 6,408,308) in view of Chin (US Patent Serial No.

6,470,277).

As described above with respect to the rejections asserted under 35 U.S.C.

§102(e), Applicants have amended claims 19, and 49 to include limitations that

neither of the aforementioned references describes either alone or in combination.

In particular, Applicants respectfully assert that none of the references describe

the limitations of receiving a user selection of one or more names each arbitrarily

assigned by a probe array manufacturer to specifically identify a probe set, where

the user types the selection of the names into a web browser. Further, neither of

the references disclose the limitations of identifying the gene or EST that

corresponds with each selected arbitrary name using data that defines an

association between the arbitrary name, specifically identified probe set, and the

corresponding gene or EST.

Applicants thus respectfully assert that each of claims 19 and 49 are

patentable and that each of claims 67 and 69-71 each depend from one of claims

19, and 49 in their chain of dependency and are also patentable for the same

reasons. Therefore, Applicants respectfully request that the rejections be

withdrawn.

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CONCLUSION

In conclusion, Applicants have amended each of claims 19, 49, and 72 to

comply with 35 USC §112 and to include limitations that none of the references

applied under 35 U.S.C. §102 or §103 disclose, and thus respectfully assert that

each are patentable. Further, since claims 50-51, 64-65, and 68 each depends

from one of claims 19, 49, or 72 in their chain of dependency each are thus

patentable for the same reasons.

For these reasons, Applicants believe all pending claims are now in

condition for allowance. If the Examiner has any questions pertaining to this

application or feels that a telephone conference would in any way expedite the

prosecution of the application, please do not hesitate to call the undersigned at

(781) 280-1522.

The Commissioner is hereby authorized to charge any additional fees

which may be required, or credit any overpayment to Deposit Account 01-0431.

Applicants respectfully request that a timely Notice of Allowance be

issued in this case.

Respectfully submitted,

By _____

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